

Confirmation No. 5711

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Applicant: | TAN | Examiner: | Hu, Rui Meng |
| Serial No.: | 10/516,546 | Group Art Unit: | 2618 |
| Filed: | December 2, 2004 | Docket No.: | SG020011 (NXPS.597PA) |
| Title: | METHOD AND APPARATUS FOR AUTO-TUNING OF A RADIO FM-RECEIVER | | |

APPEAL BRIEF

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P.O. Box 1450
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Dear Sir:

This Appeal Brief is submitted pursuant to 37 C.F.R. §41.37, in support of the Notice of Appeal filed October 8, 2009 and in response to the rejections of claims 1-7 as set forth in the Final Office Action dated July 8, 2009.

Please charge Deposit Account number 50-4019 (SG020011) \$540.00 for filing this brief in support of an appeal as set forth in 37 C.F.R. §1.17(c). If necessary, authority is given to charge/credit Deposit Account 50-0996 additional fees/overages in support of this filing.

I. Real Party In Interest

The real party in interest is NXP Semiconductors. The application is presently assigned of record, at reel/frame nos. 019719/0843 to NXP, B.V., headquartered in Eindhoven, the Netherlands.

II. Related Appeals and Interferences

While Appellant is aware of other pending applications owned by the above-identified Assignee, Appellant is unaware of any related appeals, interferences or judicial proceedings that would have a bearing on the Board's decision in the instant appeal.

III. Status of Claims

Claims 1-7 stand rejected and are presented for appeal. A complete listing of the claims under appeal is provided in an Appendix to this Brief.

IV. Status of Amendments

No amendments have been filed subsequent to the Final Office Action dated July 8, 2009.

V. Summary of Claimed Subject Matter

As required by 37 C.F.R. § 41.37(c)(1)(v), a concise explanation of the subject matter defined in the independent claims involved in the appeal is provided herein. Appellant notes that representative subject matter is identified for these claims; however, the abundance of supporting subject matter in the application prohibits identifying all textual and diagrammatic references to each claimed recitation. Appellant thus submits that other application subject matter, which supports the claims but is not specifically identified above, may be found elsewhere in the application. Appellant further notes that this summary does not provide an exhaustive or exclusive view of the present subject matter, and Appellant refers to the appended claims and their legal equivalents for a complete statement of the invention.

Commensurate with independent claim 1, an example embodiment of the present invention is directed to a method of auto-tuning a radio FM-receiver having a receiver frequency band (*see, e.g.,* Figure), the method comprising: scanning the receiver frequency

band until a FM signal is received that has a signal strength greater than a FM threshold and that is in an automatic frequency control (AFC) window associated with a valid FM station (*see, e.g.*, page 2:1-23); immediately after receiving said FM signal, testing whether the FM signal meets criteria, including checking whether the signal strength of the FM signal is greater than the FM threshold (*see, e.g.*, page 3:15-17), when the signal strength of the FM signal is greater than the FM threshold, checking whether the FM signal is in the AFC window (*see, e.g.*, page 3:15-17), and incrementing a count when the FM signal is in the AFC window (*see, e.g.*, page 3:17-19); repeating the testing step a predetermined number of times (*see, e.g.*, page 3:17-20); and storing information denoting a frequency of the FM signal when the count indicates that both of the criteria are met a majority of the predetermined number of times (*see, e.g.*, page 3:15-18).

Commensurate with independent claim 3, an example embodiment of the present invention is directed to an auto-tuning device comprising: means for registering whether or not a FM signal, received in a radio FM receiver, meets criteria for identifying the FM signal as being of a predetermined quality and being within an automatic frequency control (AFC) window associated with a valid FM station (*see, e.g.*, page 2:24-26), counting means for registering, within an interval immediately after receiving said FM signal, a number of times within a predetermined number of times that said FM signal meets both of the criteria (*see, e.g.*, page 2:27-30 and counter discussed on page 3:5-31), and means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the predetermined number of times (*see, e.g.*, page 2:21-23 and page 3:32 to page 4:5).

VI. Grounds of Rejection to be Reviewed Upon Appeal

The grounds of rejection to be reviewed on appeal are as follows:

- A. Claims 1-7 stand rejected under 35 U.S.C. § 103(a) over Kennedy (U.S. Patent No. 5,125,105) in view of Tanaka (U.S. Patent No. 5,870,666), Ichikawa (U.S. Patent No. 4,903,328) and Moers (U.S. Patent No. 6,957,053).
- B. Claim 3 stands rejected under 35 U.S.C. § 112(2).

VII. Argument

A. The § 103(a) Rejection Of Claims 1-7 Is Improper Because The Cited Combination Of References Does Not Correspond To The Claimed Invention And Because The Examiner Fails To Provide The Requisite Motivation For The Proposed Combination.

1. The Cited References Fail To Disclose Checking FM Signal Strength And AFC Window Criteria And Responsively Incrementing A Count.

The Examiner fails to address the claimed invention “as a whole” (§ 103(a)) as required, in failing to show correspondence to the limitations as arranged in the claimed invention. Instead, the Examiner improperly relies upon disparate portions of four different references in asserting correspondence to individual aspects of the claimed invention while failing to address such aspects of the claimed invention in their entirety and failing to explain how the different references would function together. For example, none of the asserted references teaches aspects of the claimed invention regarding, *e.g.*, checking, for a predetermined number of checks, whether an FM signal has both a signal strength greater than an FM threshold and a frequency that is in an automatic frequency control (AFC) window and then incrementing a count in response to the FM signal meeting both criteria. Because none of the references teaches these aspects, no reasonable combination of these references can provide correspondence to the claimed invention. As such, the § 103 rejection fails.

More specifically and as indicated in the instant specification, Appellant recognized that by checking whether the FM signal meets both of these criteria multiple times before storing the frequency of the FM signal, the capture of random noise signals can be significantly mitigated. *See, e.g.*, paragraphs 0004, 0005 and 0007-0009 of the published version of Appellant’s specification. The cited references fail to disclose or comprehend this multi-criteria determination as claimed. The Examiner acknowledges that the ‘105 and ‘053 references do not teach checking whether the FM signal meets both the signal strength and AFC window criteria multiple times and incrementing the count each time both criteria are met, as in the claimed invention, and attempts to overcome this lack of disclosure by citing to the secondary ‘666 and ‘328 references. However, these secondary references also fail to teach such aspects. More specifically, the ‘666 and ‘328 references teach separate processes

that each involve only checking a single criteria. For example, the ‘666 reference simply teaches checking the RSSI (received signal strength indicator) of a received signal M times (*see, e.g.*, Col. 3:64 to Col. 4:8), and the ‘328 reference simply teaches checking multiple times whether a received signal is in a desired frequency range (*see, e.g.*, Col. 1:48 to Col. 2:19). As such, none of the cited references teach a testing process that involves checking that the FM signal has the desired signal strength, then checking that the FM signal is in the AFC window if the signal strength test is met, then incrementing the count if the AFC window test is met, and then repeating the testing steps a predetermined number of times, as in the claimed invention.

In view of the above, the § 103(a) rejection is improper and Appellant requests that it be reversed.

2. The Examiner Failed To Provide A Valid Reason For Combining The Cited References.

The Examiner does not provide adequate motivation for combining the ‘105 and ‘666 references. Effectively, the Examiner has improperly attempted to avoid establishing explicit motivation for combining references as asserted, erroneously applying the rubric of the KSR decision to an application in which KSR does not apply. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). Specifically, the Examiner’s proposed combination does not simply involve combining teachings in such a manner that the cited references are not modified in their operation as was addressed in KSR. Instead, the ‘105 and ‘666 references are directed to receiving and processing different types of signals (analog versus digital) and, as such, the relied upon teaching of the ‘666 reference cannot simply be applied to the ‘105 reference as asserted by the Examiner. Thus, the proposed combination would involve modifying the teaching of the ‘666 reference in some undisclosed manner that has not been addressed by the Examiner. Accordingly, the Examiner’s assertion of some vague “articulated reasoning” in support of the modification (*e.g.*, “for better assurance”) is insufficient. KSR and M.P.E.P. § 2141 make it clear that such assertions are inapplicable where the operation of one of the references is modified. For example, according to M.P.E.P. § 2141, Appellant can rebut such assertions of obviousness simply by showing that “the elements in combination do not

merely perform the function that each element performs separately.” This is also consistent with various parts of *KSR*, which repeatedly refer to combined teachings in which the cited references are not modified in their operation. As such, in the context of *KSR*, the asserted combination “as a whole” is entirely unpredictable based on the asserted teachings of the ‘105 and ‘666 references.

Appellant further notes that the Examiner has failed to address the previously-explained impropriety of the Examiner’s proposed combination of the ‘105 and ‘666 references, in Appellant’s traversals of record, as required, for example, by M.P.E.P. § 707.07(f). As such, the record stands uncontested with regard to the impropriety of the Examiner’s proposed combination of the ‘105 and ‘666 references, and the rejections must be reversed.

In view of the above, the § 103(a) rejection is improper and Appellant requests that it be reversed.

3. The Proposed Combination Is Based On An Improper Hindsight Reconstruction Of The Claimed Invention.

The Examiner has impermissibly used Appellant’s teachings as the basis for the conclusion of obviousness, contrary to the requirements of M.P.E.P. and relevant law (*see, e.g.*, M.P.E.P. § 2142). In this instance, the Examiner has improperly proposed combining disparate portions of four different references in the manner taught, not by the cited references, but by Appellant’s disclosure. As the Examiner has failed to provide any evidence whatsoever of motivation for modifying the cited references (as discussed in section A(2) above), the only evidence of record that teaches combining the cited references in the manner proposed by the Examiner is Appellant’s disclosure.

For example, none of the cited references teach a testing process that involves checking that the FM signal has the desired signal strength, checking that the FM signal is in the AFC window if the signal strength test is met, incrementing the count if the AFC window test is met, and repeating the testing steps a predetermined number of times, as in the claimed invention. Furthermore, the Examiner has failed to establish that any of the references provides any motivation for combining the disparately-cited teachings therein, as asserted

and/or as in the claimed invention. The cited references thus appear to fail to disclose Appellant's recognition (*e.g.*, discovery) as discussed above. As none of the cited references teach such aspects, the Examiner appears to be improperly combining the cited references in the manner taught only by Appellant's disclosure in an improper hindsight reconstruction of the claimed invention. Absent Appellant's specification, there is nothing in the record that would suggest to the skilled artisan to combine the disparate portions of the four cited references in a manner proposed by the Examiner.

In view of the above, the § 103(a) rejection is improper and Appellant requests that it be reversed.

B. The § 112(2) Rejection Of Claim 3 Is Improperly Based Upon An Untenable Assertion That The Numbers Zero (0) and One (1) Are Not Numbers.

The Examiner's rejection of claim 3, asserting that a "0 or 1 count is not in line with 'a number of times'" essentially relies upon the erroneous assertion that 0 and 1 are not numbers. Specifically, claim 3 recites limitations directed to a number of times that both criteria are met within a predetermined number of times. As may be expected and in accordance with one or more embodiments, a detected signal could meet these two criteria only one more time, or no more times, after an initial detection (*e.g.*, consider noise). Accordingly, the Examiner's assertion that a 0 or 1 count is not in line with a "number of times" in accordance with the claimed invention is untenable. Appellant submits that 0 and 1 are both a number of times and, as such, the Examiner has failed to present any basis for a § 112(2) rejection.

Appellant further submits that the Examiner improperly equates the breadth of claim 3 with indefiniteness. *See, e.g.*, M.P.E.P. § 2173.04 ("Breadth of a claim is not to be equated with indefiniteness."). In this instance, the Examiner asserts that "a number of times" should be limited to 2 or more. Thus, the Examiner appears to be improperly attempting to argue the scope of the claims under the guise of indefiniteness.

In view of the above, the § 112(2) rejection of claim 3 is improper and Appellant requests that it be reversed.

VIII. Conclusion

In view of the above, Appellant submits that the rejections of claims 1-7 are improper and therefore requests reversal of the rejections as applied to the appealed claims and allowance of the entire application.

Authority to charge the undersigned's deposit account was provided on the first page of this brief.

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APPENDIX OF CLAIMS INVOLVED IN THE APPEAL
(S/N 10/516,546)

1. Method of auto-tuning a radio FM-receiver having a receiver frequency band, the method comprising:

scanning the receiver frequency band until a FM signal is received that has a signal strength greater than a FM threshold and that is in an automatic frequency control (AFC) window associated with a valid FM station;

immediately after receiving said FM signal, testing whether the FM signal meets criteria, including

checking whether the signal strength of the FM signal is greater than the FM threshold,

when the signal strength of the FM signal is greater than the FM threshold, checking whether the FM signal is in the AFC window, and

incrementing a count when the FM signal is in the AFC window;
repeating the testing step a predetermined number of times; and

storing information denoting a frequency of the FM signal when the count indicates that both of the criteria are met a majority of the predetermined number of times.

2. Method as claimed in claim 1, wherein the predetermined number of times is 10 and the information denoting the frequency of the FM signal is stored when the count is at least 8.

3. Auto-tuning device comprising:

means for registering whether or not a FM signal, received in a radio FM receiver, meets criteria for identifying the FM signal as being of a predetermined quality and being within an automatic frequency control (AFC) window associated with a valid FM station,

counting means for registering, within an interval immediately after receiving said FM signal, a number of times within a predetermined number of times that said FM signal meets both of the criteria, and

means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the predetermined number of times.

4. The method of claim 1, wherein scanning the receiver frequency band includes scanning a frequency range from 87.5 to 108.5 MHz.

5. The method of claim 1, wherein scanning the receiver frequency band includes sweeping a local oscillator (LO) signal in a range from 98.2 to 119.2 MHz in steps of 50 kHz.

6. The method of claim 5, further comprising performing the testing step the predetermined number of times for each LO sweep and, at the beginning of each LO sweep, resetting the count to zero.

7. The method of claim 6, wherein the predetermined number of times is 10 and, for each LO sweep, storing information denoting the frequency of the FM signal when the count is at least 8.

APPENDIX OF EVIDENCE

Appellant is unaware of any evidence submitted in this application pursuant to 37 C.F.R. §§ 1.130, 1.131, and 1.132.

APPENDIX OF RELATED PROCEEDINGS

As stated in Section II above, Appellant is unaware of any related appeals, interferences or judicial proceedings.